AGENDA

SPECIAL COMMITTEE ON RIVERFRONT ACTIVITIES AND BASEBALL

February 18, 2020 **6:30 p.m.**
Aldermen Long, Sapienza, **Aldermanic Chambers**
Porter, Barry, Levasseur **City Hall (3rd Floor)**

1. Chairman Long calls the meeting to order.

2. The Clerk calls the roll.

3. Proposed deferred maintenance plan for the Delta Dental Stadium.
   Gentlemen, what is your pleasure?

4. If there is no further business, a motion is in order to adjourn.

AA Affiliate of the
Toronto Blue Jays

February 5th, 2020

Matthew Normand
City Clerk
City of Manchester
One City Hall Plaza
Manchester, NH 03101

Dear Mr. Normand,

As the attached documentation indicates, the New Hampshire Fisher Cats and City of Manchester Department of Public Works commissioned an independent audit by the Aramark Corporation to assess the need for on-going maintenance and overall capital improvements to Northeast Delta Dental Stadium. From that audit, and included in this packet, is a 3 -Year Deferred Maintenance Plan jointly prepared by Fisher Cats Management and the Department of Public Works as called out in the amendment to the Agreement between the City and the Team.

The attached work seeks to continue to maintain the state-of-the art-status of the facility, as well as continue to provide a top notch experience for the citizens of Manchester and the surrounding area.

The Team would like to request the approval of the Special Committee on Riverfront Activities and Baseball to utilize the dollars from the capital reserve fund and proceed with the attached work. Please advise as to any questions regarding the projects.

Your consideration of this request is most appreciated.

Sincerely Yours,

Michael Ramshaw
President
New Hampshire Fisher Cats

Jim Flavin
General Manager
New Hampshire Fisher Cats

2020-2022 NEDD DEFERRED MAINTENANCE PLAN

2020

Stadium Seats *FCA ID 16 & 17*	Replacement of Seats	$	21,000.00
Concrete Slab - Concourse (Remainder of Concourse) *FCA ID 5*	Repair & Repaint Slab	$	21,800.00
Concessions Flooring (Home Plate Concessions) *FCA ID 10*	Strip and Refinish	$	18,200.00
Clubhouse Flooring *FCA ID 1*	Replace	$	20,000.00
Merchandise POS System	Replace	$	17,500.00
Painting of Trouble Areas on Steel Superstructure *FCA ID 7-8*	Repaint	$	27,825.00
Amplifiers	Replace	$	16,903.70
Pad Wraps	Replace	$	6,000.00
VIP Tent	Replace	$	4,000.00
		Total:	**$153,228.70**

2021

80 Gallon Hot Water Heaters *FCA ID 24 & FCA ID 26*	Replace as needed		TRADE
Concrete Slab - Concourse (Remainder of Concourse) *FCA ID 5*	Repair & Repaint Slab	$	34,700.00
PTAC Condintioning Units in Suites *FCA ID 27*	Replace as needed	$1,159.12 per unit	
Suite Flooring - Remaining Suites *FCA ID 1*	Replace Carpets	$	27,000.00
Concessions Flooring (First Base Concessions) *FCA ID 10*	Strip and Refinish	$	18,200.00

Total: $79,900

2022

Suite Level Concourse Flooring *FCA ID 15*	Strip and refinish	Awaiting Quote from ACC
PTAC Condintioning Units in Suites *FCA ID 27*	Replace as needed	$1,159.12 per unit

Total: TBD

COMPLETED PROJECTS 2017-2020

2017/2018

PROJECT	ACTION	COST	
Galvanized Railings Exhbiting Rust *FCA ID 6*	Repair and Repaint	In Progress	
Concrete Slab - Concourse (Entrance To Suite Overhang) *FCA ID 5*	Repair & Repaint Slab	$ 79,000.00	COMPLETED
Concessions Flooring (Third Base Concessions) *FCA ID 10*	Strip and Refinish	$ 18,200.00	COMPLETED
Walls Need Paint *FCA ID 11*	Repaint	In Progress	
Ceilings Severly Stained *FCA ID 12*	Replace Ceiling Tiles	In Progress	
Stadium Seats *FCA ID 16 & 17*	Replacement of Seats	$ 24,015.00	COMPLETED
Handicap Lift Field Level	Replace Unit	$ 24,000.00	COMPLETED
Removal of Failed Hot Water Units *FCA ID 22*	Remove Units	$ 6,000.00	COMPLETED
Protection for Refrigeration Condensors *FCA ID 34*	Provide Protection	Done	
		Total: $151,215	

2019

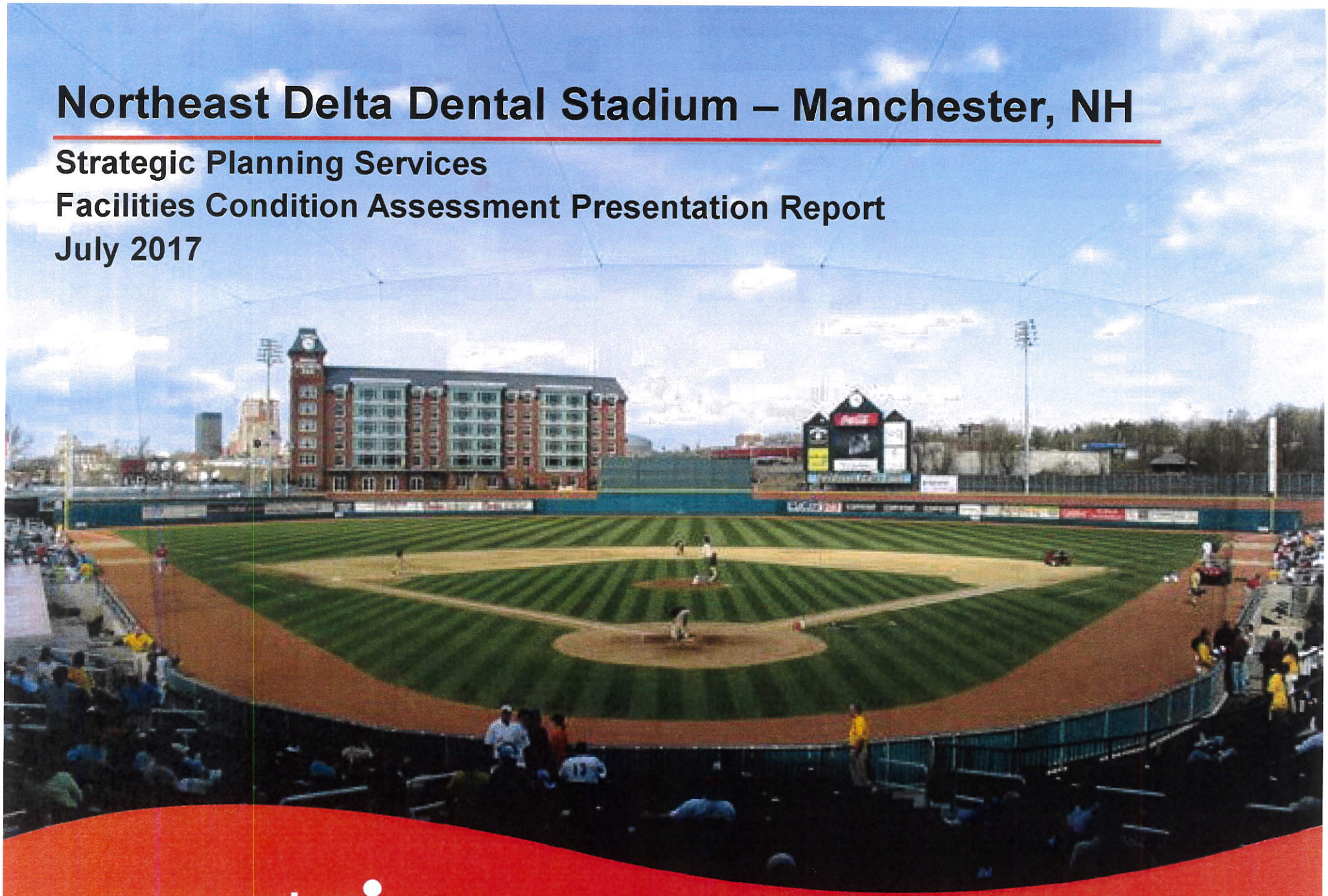
PROJECT	ACTION	COST		
Field Level Fire Suppression Repairs *(ACCELERATED)*	Replace and Repair	$	45,000.00	COMPLETED
Suite Flooring - 15 Suites (*ACCELERATED*) *FCA ID 1*	Replace Carpets	$	27,000.00	COMPLETED
Concrete Slab - (RF to Homeplate) *FCA ID 5*	Repair & Repaint Slab	$	34,300.00	COMPLETED
Replacement of Commercial Washer/Clubhouse	Replace	$	12,785.00	COMPLETED
Painting of Trouble Areas on Steel Superstructure *FCA ID 7-8*	Repaint	$	26,500.00	COMPLETED
Corrugated Exterior Sheathing Is Rusting *FCA ID 9*	Repair and Replace		In Progress	
Repairs to Riser Room	Repair/Replace	$	13,645.00	COMPLETED
Clubhouse Flooring *FCA ID 1*	Replace	$	12,362.00	COMPLETED
Stadium Seats *FCA ID 16 & 17*	Replacement of Seats	$	20,998.30	COMPLETED
			Total: $192,590.30	

Northeast Delta Dental Stadium – Manchester, NH

Strategic Planning Services

Facilities Condition Assessment Presentation Report

July 2017



aramark

Acknowledgments

This report could not have been accomplished without the support and cooperation of the employees of the City of Manchester. Invaluable assistance was provided by the Fisher Cats team and its dedicated staff. As leader of the Aramark Engineering and Asset Solutions team, I would like to extend my sincere thanks to all of them. Their contribution to this report is hereby acknowledged.

We are especially grateful as well to the following staff of Fisher Cats team:

Tim Hough – VP Stadium Operations, New Hampshire Fisher Cats
Jim Flavin – General Manager, New Hampshire Fisher Cats
Eric Krueger – Facilities Superintendent
Tim Clougherty – Deputy Public Works Director

And a warm thank you to all of the staff that provided their thoughts and input.

Table of Contents

A. ASSESSMENT OVERVIEW

Facility Condition Assessment Study Overview

The City of Manchester has taken a proactive approach to addressing its deferred maintenance needs by retaining an independent firm, Aramark Engineering and Asset Solutions, to perform a facilities condition assessment of the Northeast Delta Dental Stadium, home of the Fisher Cats. The purpose of the assessment is to identify the size and scope of the facilities deferred maintenance and capital re-investment needs, as well as prioritize those needs. This assessment has enabled, and will continue to enable, the stadium operators to plan for the future by having an appropriate process and tools for addressing their needs, as well as develop an appropriate phase-out strategy.

The level of deferred maintenance identified in this condition assessment report has been calculated at $19.84 per GSF. This level of deferred maintenance is below the range of $25/GSF and $65/GSK recently seen in similar studies by Aramark.

This facilities condition assessment report submitted to the City provides a starting point for making informed, data-driven decisions regarding the disposition of existing and future facility deferred maintenance funds.

This report provides the tools to develop a strategy for a comprehensive facilities re-investment program. Once existing facilities' deferred maintenance needs and future capital renewal requirements have been identified, the stadium operators can assess options regarding deferred maintenance funding and make informed decisions regarding the allocation of capital re-investment in its facilities.

Facility Condition Assessment Study Overview

It is crucial that deferred maintenance spending is consistent with both the long-term direction of the Stadium and is in alignment with a clearly defined maintenance phase-out strategy. As the stadium operators and the City of Manchester face increasingly demanding fiscal pressures, it is essential that facility-spending decisions be developed within a context that is consistent with both the mission and basic building needs. This facilities condition assessment report provides the tools to assist with the allocation of funds to re-invest in the stadium in the most beneficial manner, within each budget year's available capital resources.

In addition to performing the facilities condition assessment and providing a detailed report, Aramark has provided the stadium operators a license to use **Aramark's OptimaWeb software** for one year at no cost. This online tool allows the Stadium planners to manage the database of information contained in the report. It is a state-of-the-art, proprietary, online application that allows users to track and trend the identified deferred maintenance and capital renewal needs through simple and easy-to-create reports, charts, and graphs which track completed projects. It also identifies the highest priority systems or equipment requiring attention. The software also provides the ability to calculate the stadium's **Facilities Condition Index or FCI,** allowing the stadium operators and the City of Manchester to track the progress of the re-investment program over time.

Goals & Objectives

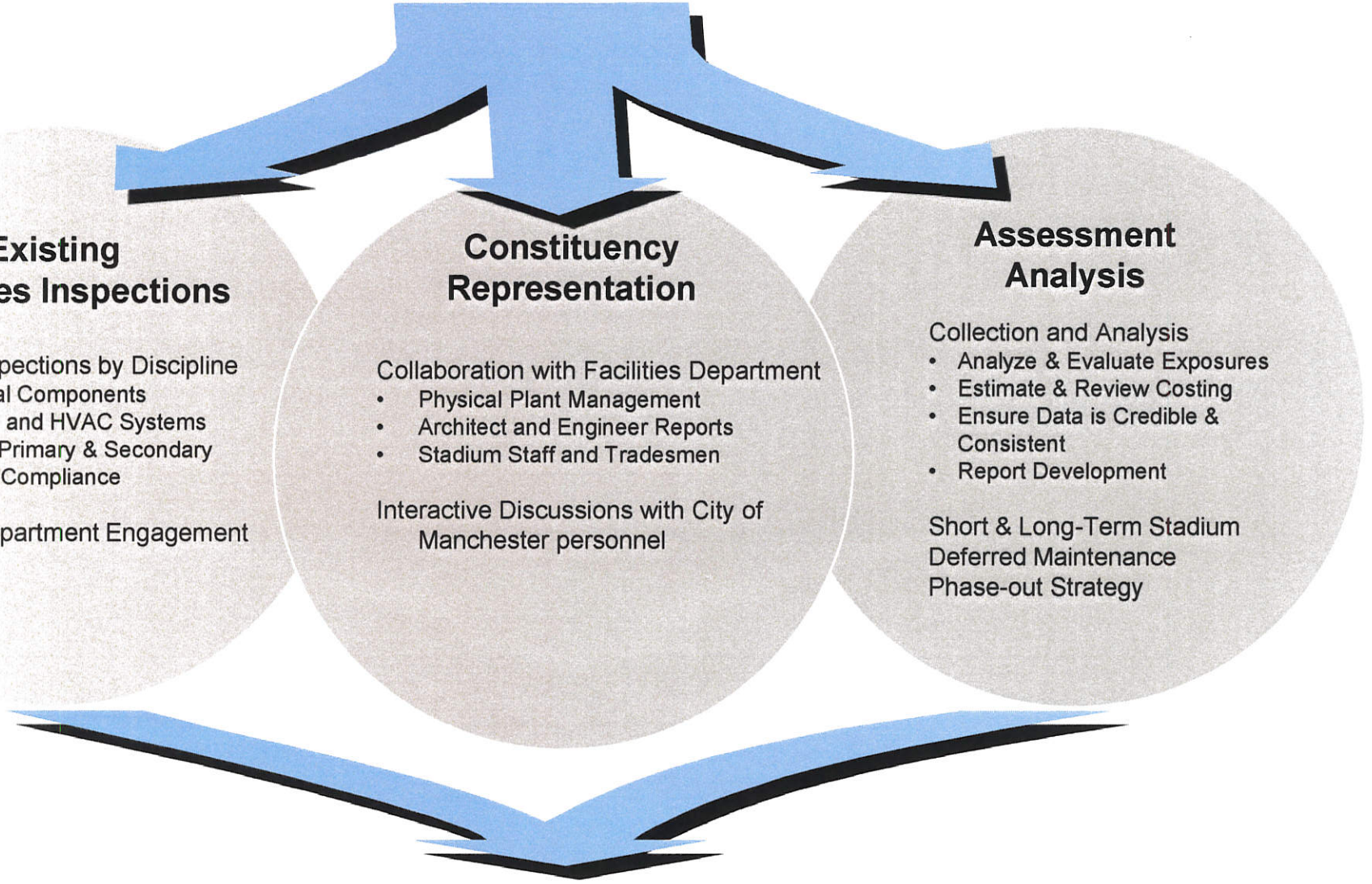
GOAL

Identify system-level mechanical, plumbing, electrical, and architectural exposures to **identify the building's deferred maintenance and capital renewal needs** in concert with the stadium's ability to provide a safe, comfortable and aesthetically pleasing sporting experience.

OBJECTIVES

- Review of building systems to determine condition and to **define the magnitude and cost** of the deferred maintenance and capital renewal need.
- Development of system-level deferred maintenance **observations by categorization** and expected capital cost.
- **Prioritize the deferred maintenance needs** to assist in the development of a phase-out strategy that considers cost containment opportunities and programmatic needs.
- Develop a **summary of findings** with a complete set of standard reports organized in an easy-to-use format for the development of future planning efforts.

Process

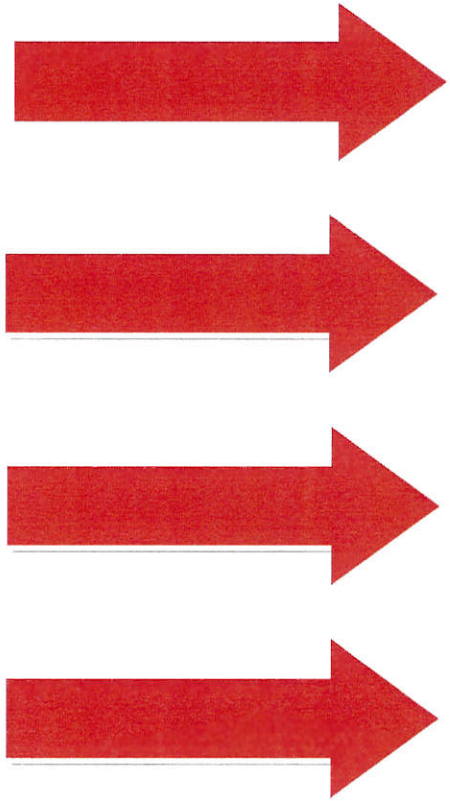


Phase-out Strategy Development Tool

Implementation Inputs & Outputs

INPUTS

- On-site Assessment/ Walk-Through
- Dialogue with Facilities Department Representative
- Interviews of Stadium Tradesmen
- Off-site Engineering Analysis
- Off-site Observation Costing Effort



OUTPUTS

- Major Issues Identification
- Detail Listing of Deferred Maintenance Observations
- Deferred Maintenance Project List with Capital Costs
- Facility Condition Index (FCI)
- Phase-out Strategy

B. STADIUM OVERVIEW

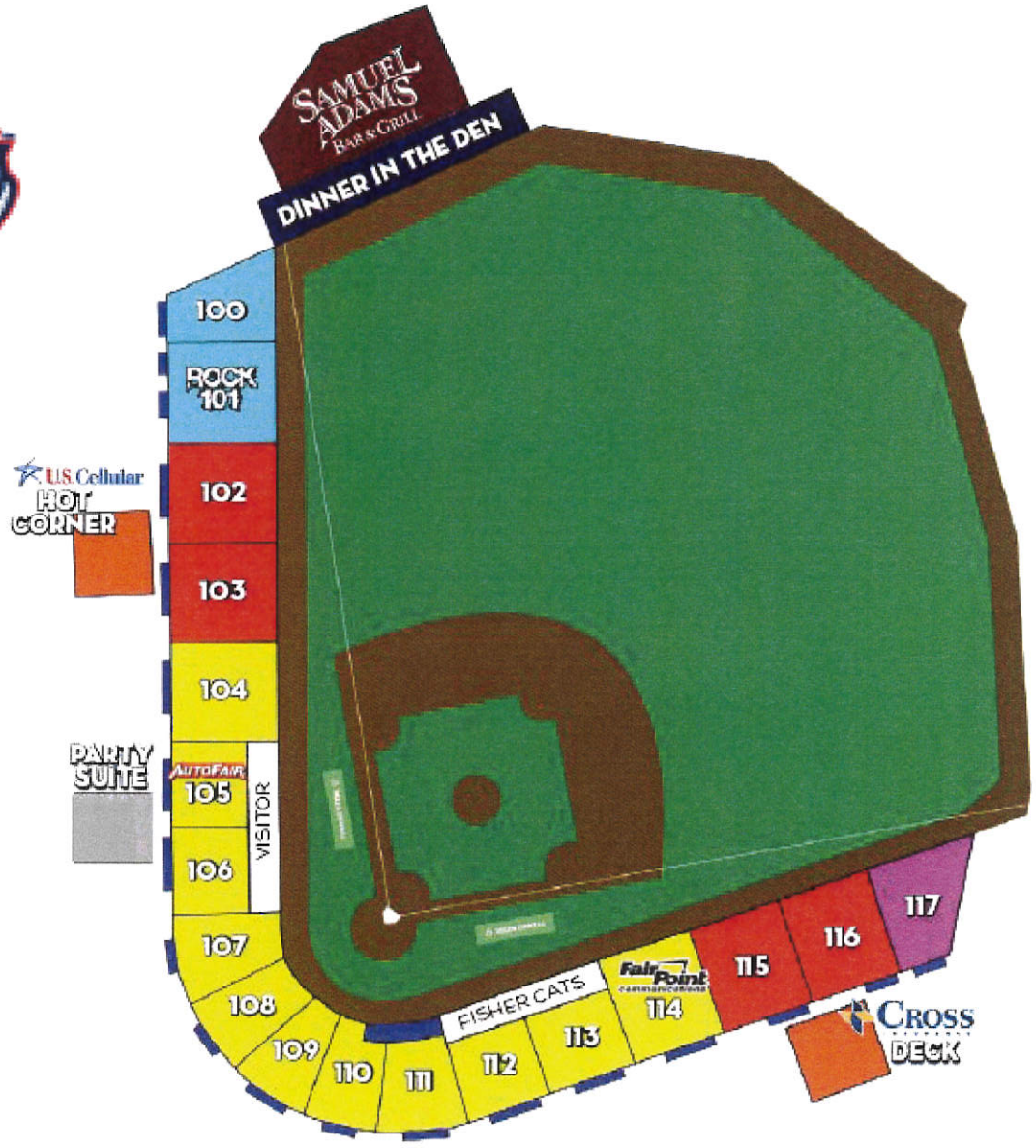
Stadium Overview

Northeast Delta Dental Stadium, home of the New Hampshire Fisher Cats, opened in April of 2005. A few years later, the Samuel Adams Bar and Grill was completed prior to the 2008 season.

The facility was designed by the architectural firm HNTB, Kansas City, and the 115,000-square foot stadium has a capacity of 6,500 seats. Additional space of approximately 6,000- square foot allows for two 100-person party decks one on the first side and one on the third base side. A 300-person picnic area in left field, 28 luxury suites, and the Samuel Adams Bar & Grill provide additional patron space. This space is served by numerous concession stands and has men's and lady's rooms.

This public space is augmented by spacious locker rooms, team offices, rest rooms, storage rooms, kitchen, commissary storage, ground equipment storage, and batting cages.

Stadium Layout



C. DEFINITIONS

Report Definitions

Priority Criteria

Deferred Need

Priority 1 Currently Critical
a. correct a cited safety hazard
b. return a system to operation
c. stop accelerated deterioration

Priority 2 Potentially Critical within a Year
a. life safety exposure
b. intermittent operations
c. rapid deterioration

Priority 3 Necessary – Not yet critical
a. time sensitive issue (i.e. energy conservation)
b. non-time sensitive issue (i.e. modernization)

Planned or Modernization

Priority 4 Recommended
a. will require attention within the next 3 years
b. will require attention within the next 10 years

Priority U Undefined Time Frame

Report Definitions

Budget Program

Deferred Maintenance: Critical maintenance that has been delayed and will result in significant added costs, potential program curtailment or interruption, and/or liability issue.

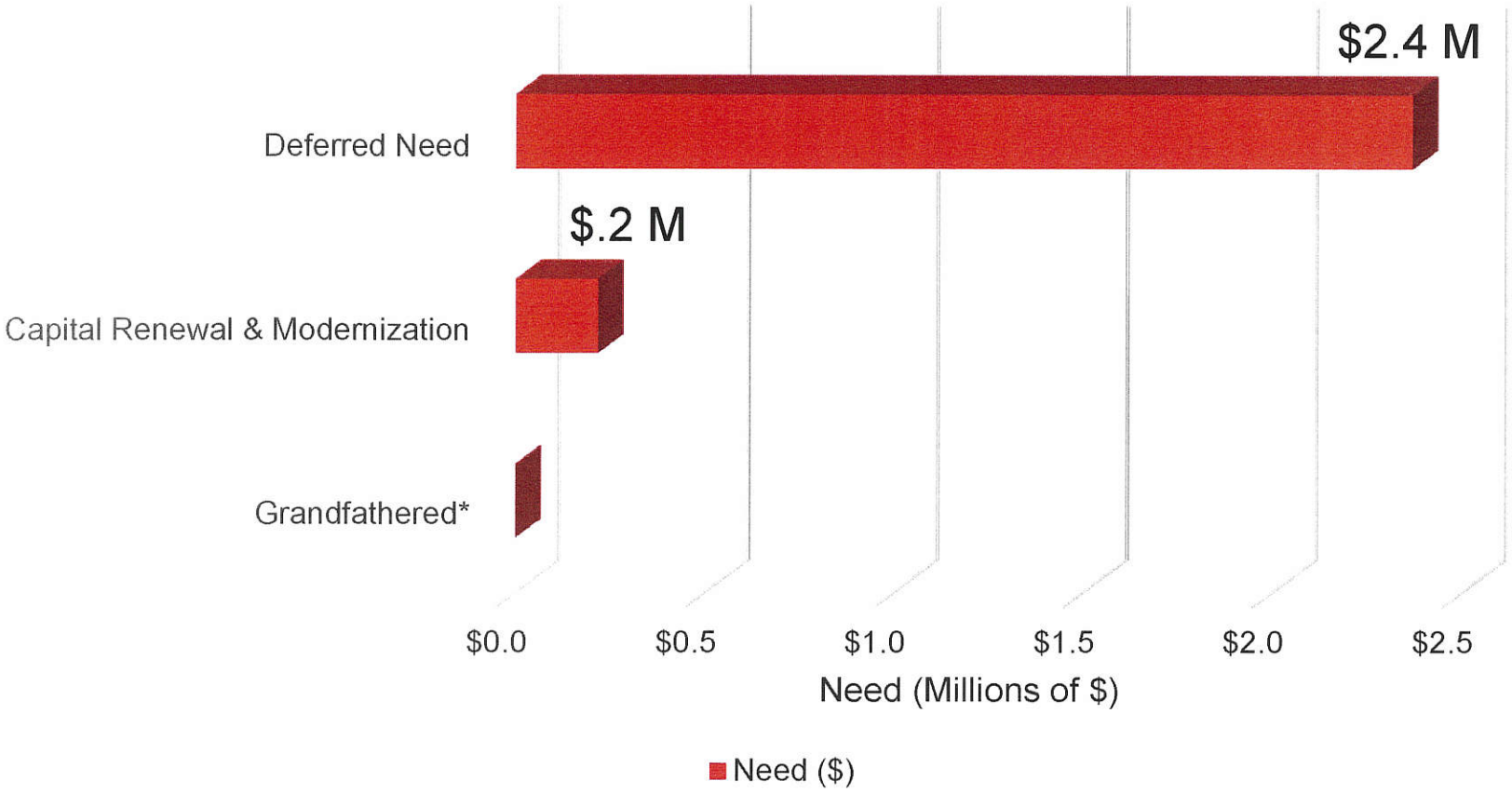
Modernization: Modifications or improvements dedicated to raise level of performance provided by the facility, electrical/mechanical systems and/or furnishings to currently accepted standards.

Lifecycle: Investments required simply due to the existing equipment or building components has worn our due to age. Replacements that are essential for the normal protection and preservation of the facilities' structural integrity, functional utility, and/or aesthetic impact.

Regulatory Compliance (Grandfathered): Changes to a facility to accommodate a modification in code requirements. These are typically required when major renovations occur.

D. EXECUTIVE SUMMARY

Total Facility Need Overview

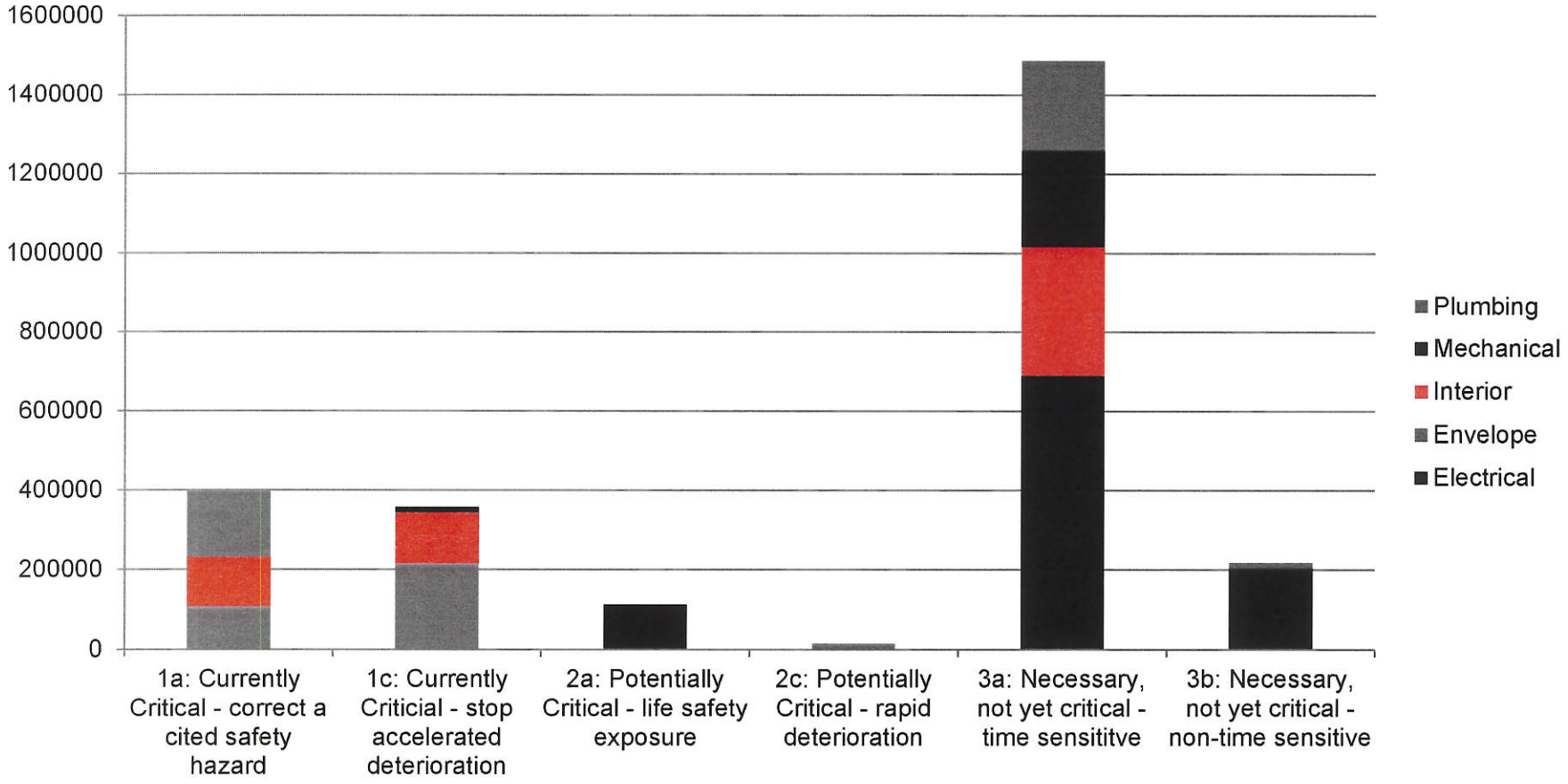


Deferred Need: $19.83 per GSF

Total Need: $21.48 per GSF

***Grandfathered = Does not meet current codes/standards**

Total Need by Priority

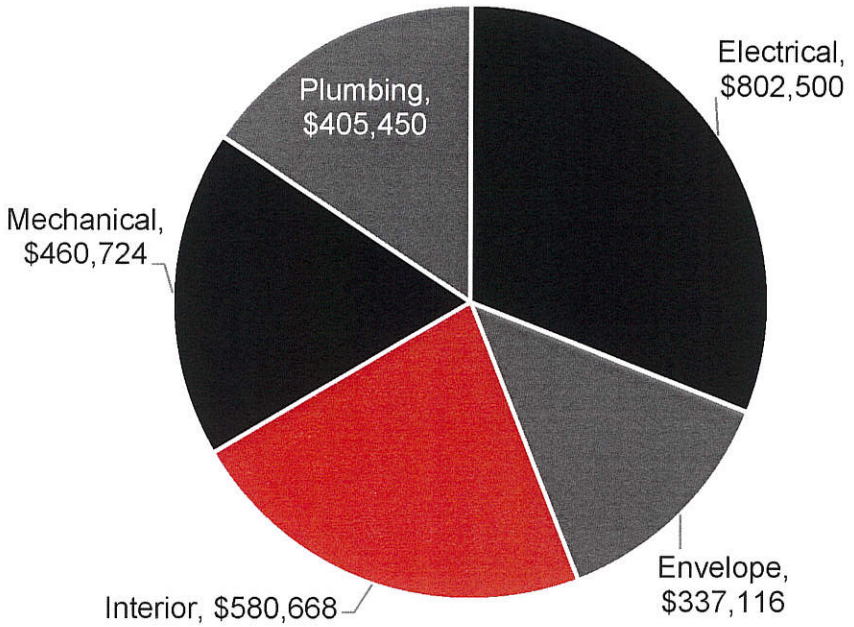


Totals by Category

Deferred Needs: $2.4 M
Capital Renewal & Modernization Needs: $217 k
Grandfathered Needs: $0

Total Need by System

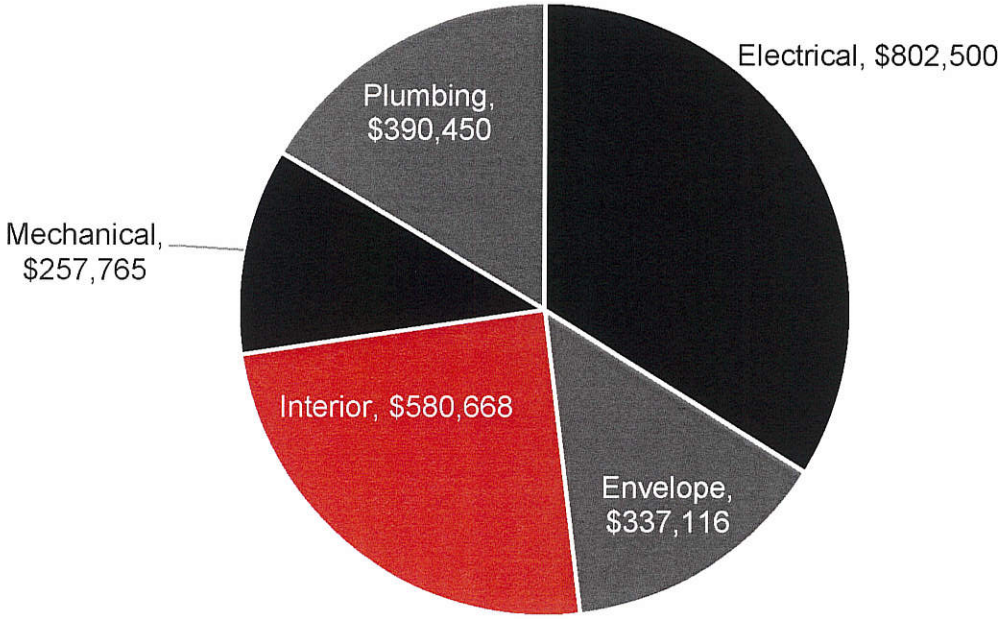
Observation Summary by Building System



Total Need:
$2,600,000

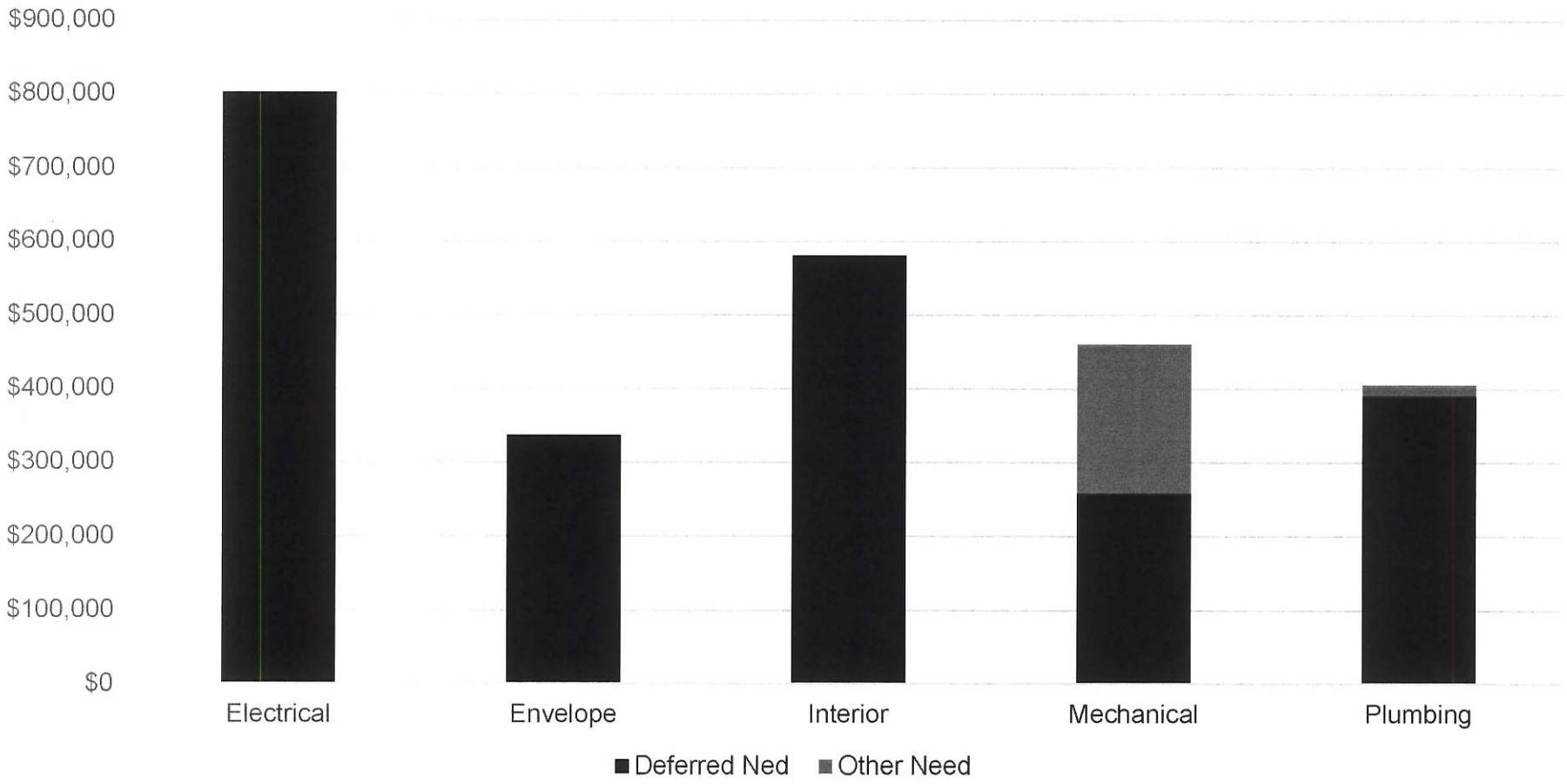
Deferred Need by System

Observation Summary by Building System
Deferred Needs Only



Total Deferred Need: $2,400,000

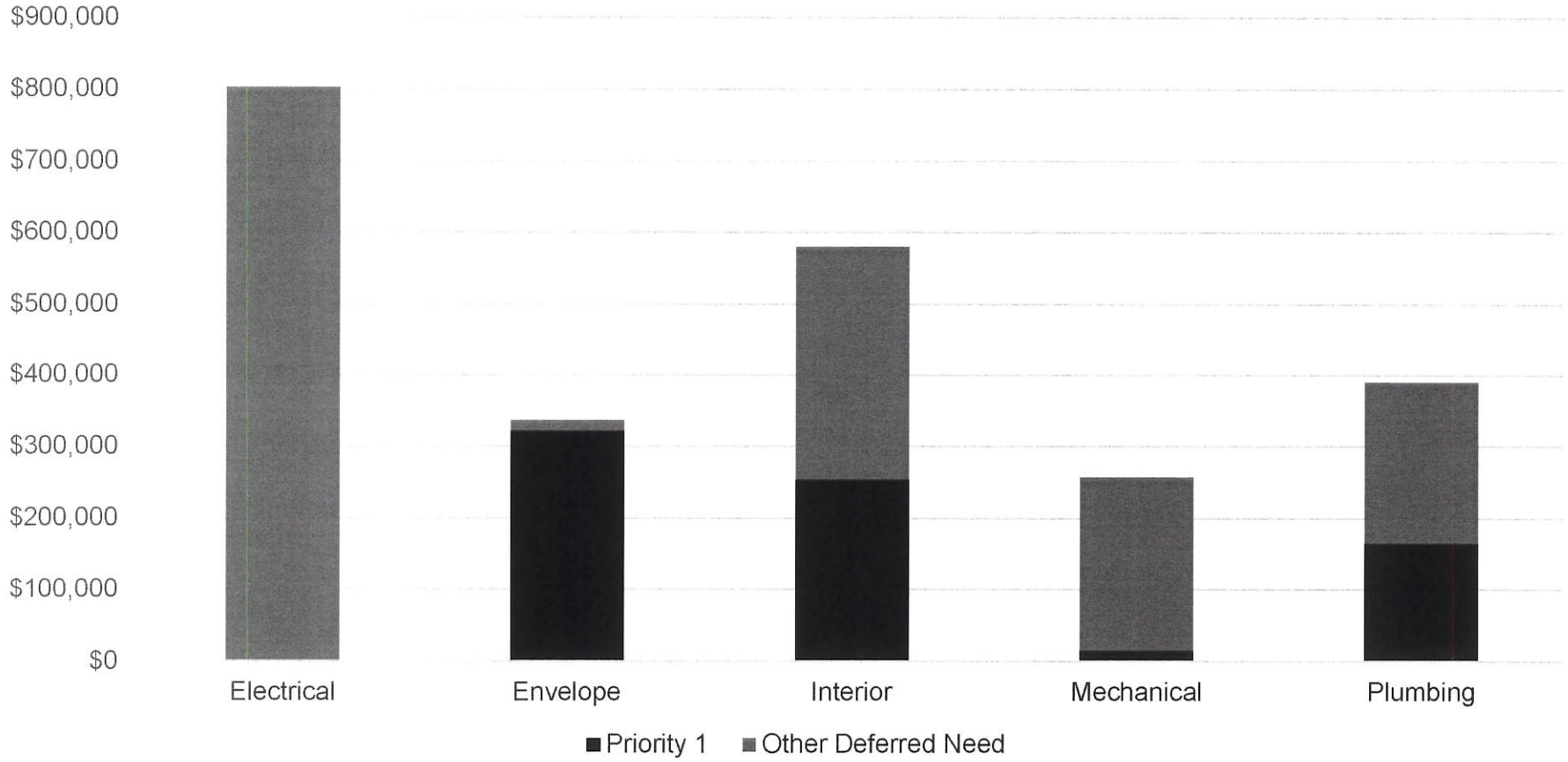
Total Need by System & Priority



Totals by Category

Deferred Needs: $2.4 M
Other Needs: $217 k

Deferred Need by System & Priority



Totals by Category

Priority 1 Needs: $755 k
Other Deferred Needs: $1.6 M

E. SUMMARY OF MAJOR ISSUES

Summary of Major Issues

Architectural

- Water Infiltration
- Structural Steel Painting
- Galvanized Handrail Painting
- Outfield Wall Stability
- Stadium Seats

Mechanical & Plumbing

- Air Conditioning and Ventilation Systems
- Building Automation System/HVAC Controls
- Domestic Water Heaters
- Lavatory Facilities for Sam Adams Bar & Grill
- Gas Systems for Sam Adams Kitchen

Electrical

- Electrical Systems for Sam Adams Kitchen
- Field Lighting
- Lightning Protection

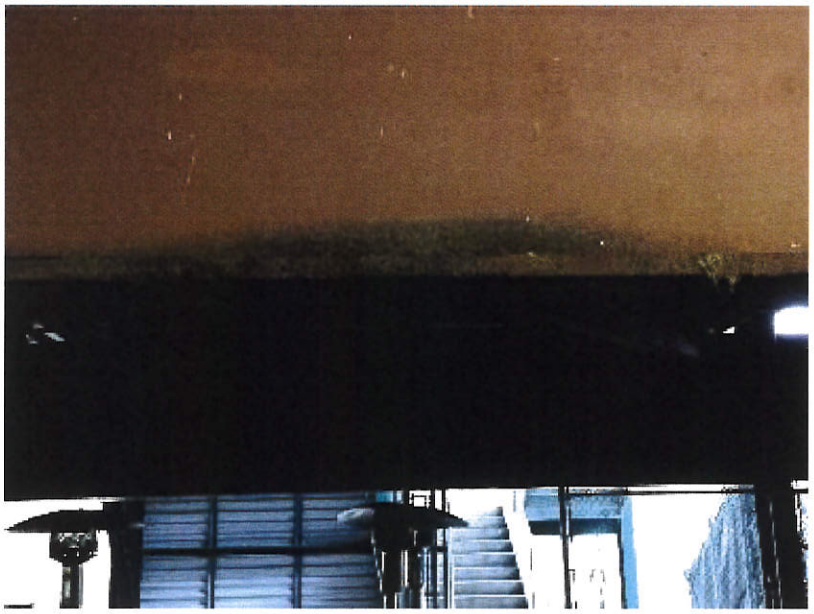
ARCHITECTURAL

Water Infiltration

Exposure: Active leaks increases threats to underlying structure and interior finishes.

Impact: Unsightly appearance of damaged interior finishes and rusted structural members.

Crack in slab



Leaks causing structural rust

Crack in slab

Rusted Structural Steel Framework

Exposure: Structural steel members are beginning to show signs of rust.

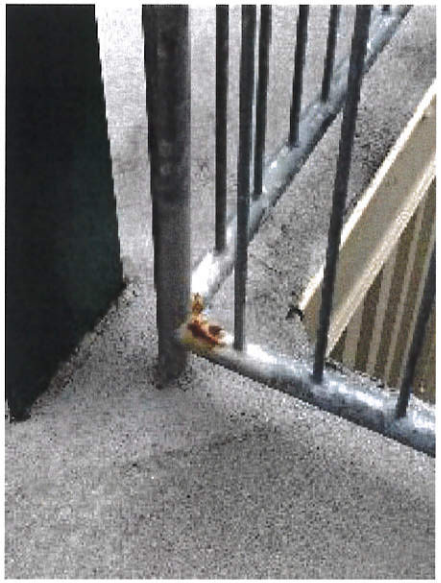
Impact: Unsightly appearance and eventual structural weakening.

Examples of rusted steel structural members

Rusting Galvanized Handrails

Exposure: Unsightly rusted areas on handrails throughout the stadium.

Impact: Eventual safety handrail failure.



Typical examples of rusted galvanized pipe handrails

Collapsing Retaining Walls

Exposure: Retaining walls are beginning to tilt into the playing fields.

Impact: Walls will eventually collapse, possibly causing severe personal injuries.

North retaining wall should be a straight line.

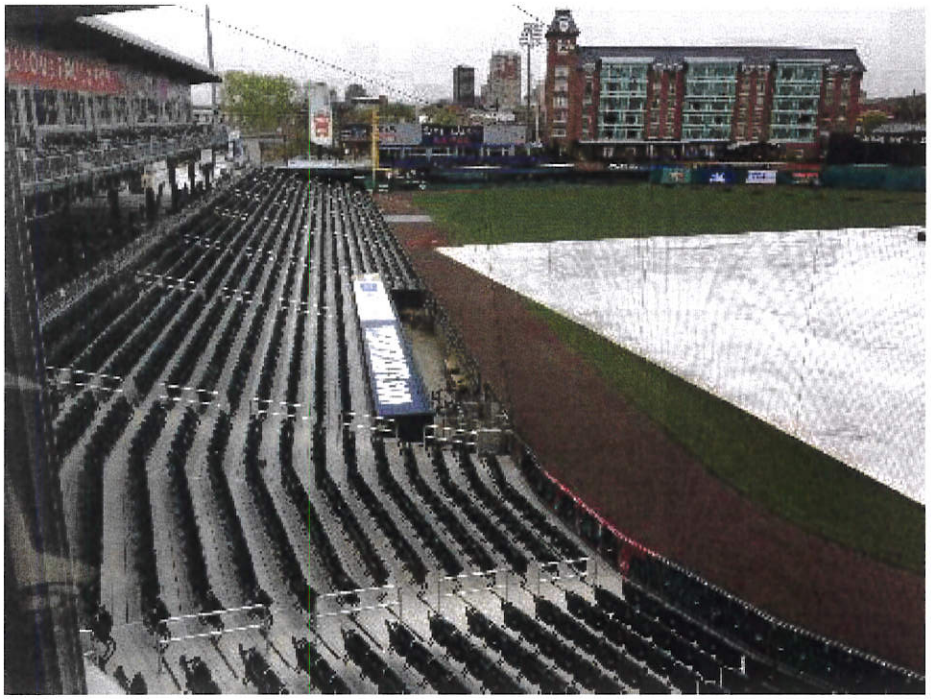
South wall is leaning at the top as seen above.

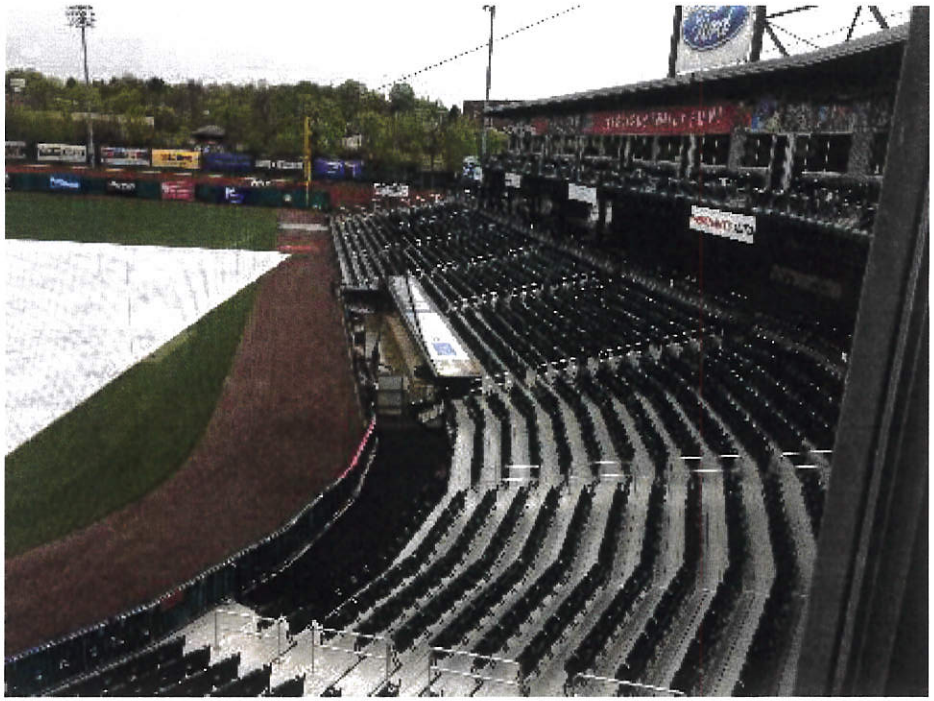
South retaining wall is tilting towards the left.

Stadium Seating

Exposure: Numerous non-functioning seats along with broken anchors.

Impact: Potential for physical injuries as well as limiting seating capacity.





General view of open stadium seating

MECHANICAL & PLUMBING

Air Conditioning and Ventilation Systems

Exposure: Many HVAC systems are aged, in some cases corroded and damaged, energy inefficient.

Impact: Increased maintenance costs, units becoming more undependable, beginning of failures in service, continuing and rising high energy costs.

Typical aged, inefficient Packaged Terminal Air Condition (PTAC) in luxury suites.

Aged, inefficient, refrigeration units, damaged by ice falling from roof. Note temporary plywood shield on upper right.

Typical aged, corroded, inefficient HVAC unit.

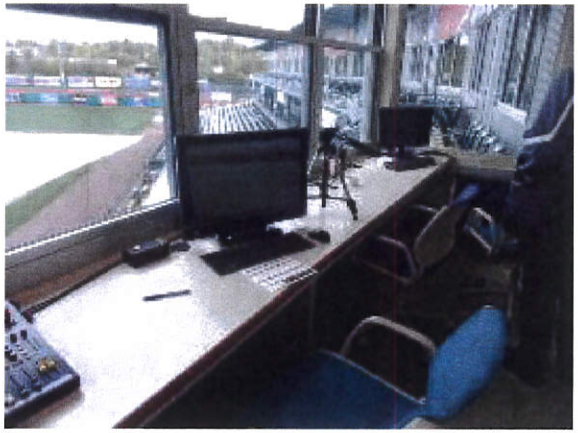
Building Automation System/HVAC Controls

Exposure: Many highly important areas are not provided with the services of a BMS, including remote monitoring and control, scheduling, alarm of abnormal conditions, etc.

Impact: Energy is wasted, and comfort of important areas is not insured by positive control.

Typical simple, inaccurate, non-programmable local controls on large quantity of PTAC's in luxury suites.

Typical Team area not remotely monitored, scheduled, alarmed, controlled by BMS.

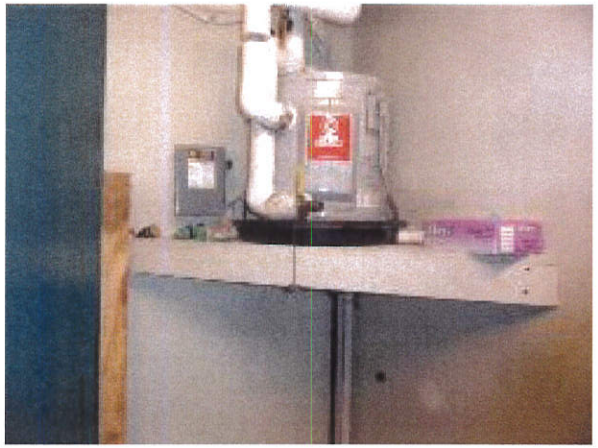


Typical Press/Coach area not remotely monitored, scheduled, alarmed, controlled by BMS.

Domestic Water Heaters

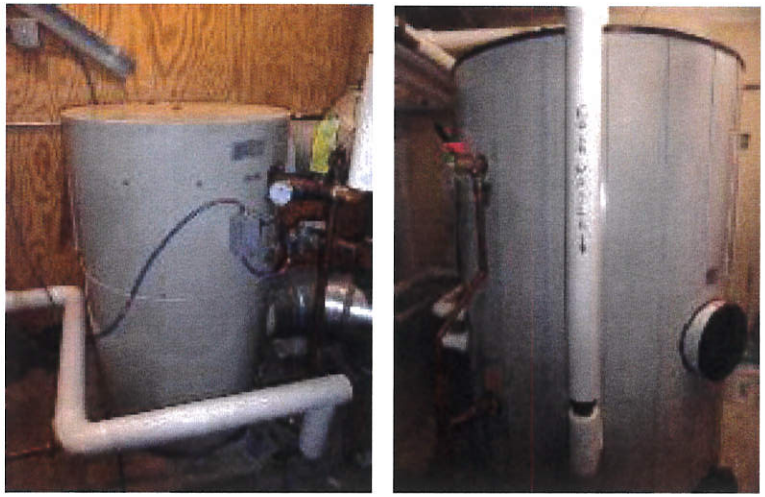
Exposure: Many of the water heaters for domestic water are original and reaching, or past, their expected lives. (Note, hot water heaters in the suites can be discontinued.)

Impact: Unreliable provision of water service, high maintenance and incident response costs.



Aged, small electric water heater past the end of its expected life, typical of the large quantity serving luxury suites.

80 gallon electric heater past the end of its expected life, feeding third base side of concourse.



Large gas water heater (one of the two associated 500 gallon storage tanks also shown) is at the end of its expected life. Serves the bottom level of the stadium, including Team areas.

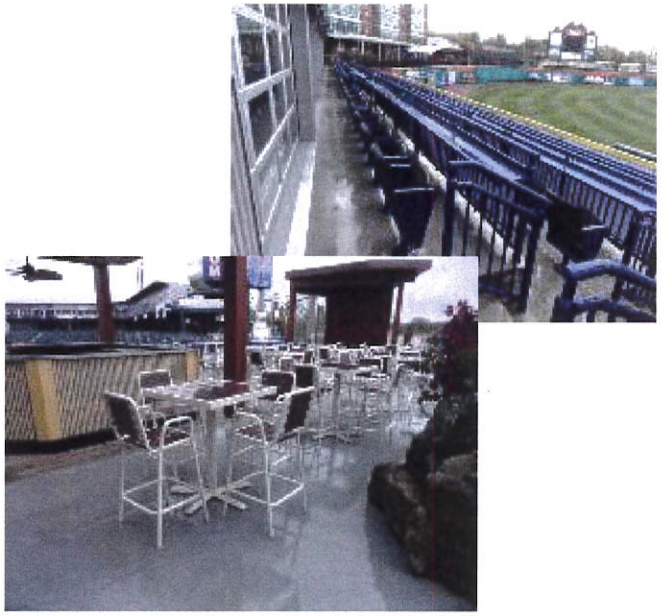
Rest Room Facilities for Sam Adams Bar & Grill

Exposure: Bar & Grill, including the exterior veranda and seating served by it, appears to have inadequate Men's and Ladies Room facilities; area currently consists of a single water closet and lavatory to serve two bars, kitchen, and patrons.

Impact: Inconvenience for patrons and potential for long wait times for this possibly very highly popular, high visibility area .

Limited existing Water Closet and Lavatory serving entire Bar & Grill.

Interior bar, kitchen and seating served by existing lavatory.



Exterior bar, veranda seating, and reserved seating served by existing lavatory.

Support Systems for Sam Adams Kitchen

Exposure: Non-permanent systems have less reliability than permanent systems.

Impact: Temporary services can be unsafe and not intended for long term use, nor are they reliable.

Existing kitchen equipment, inside of temporary tent enclosure, showing lack of protected food storage, lack of hand-wash lavatories, sinks.

Large quantity of propane storage used to power cooking.

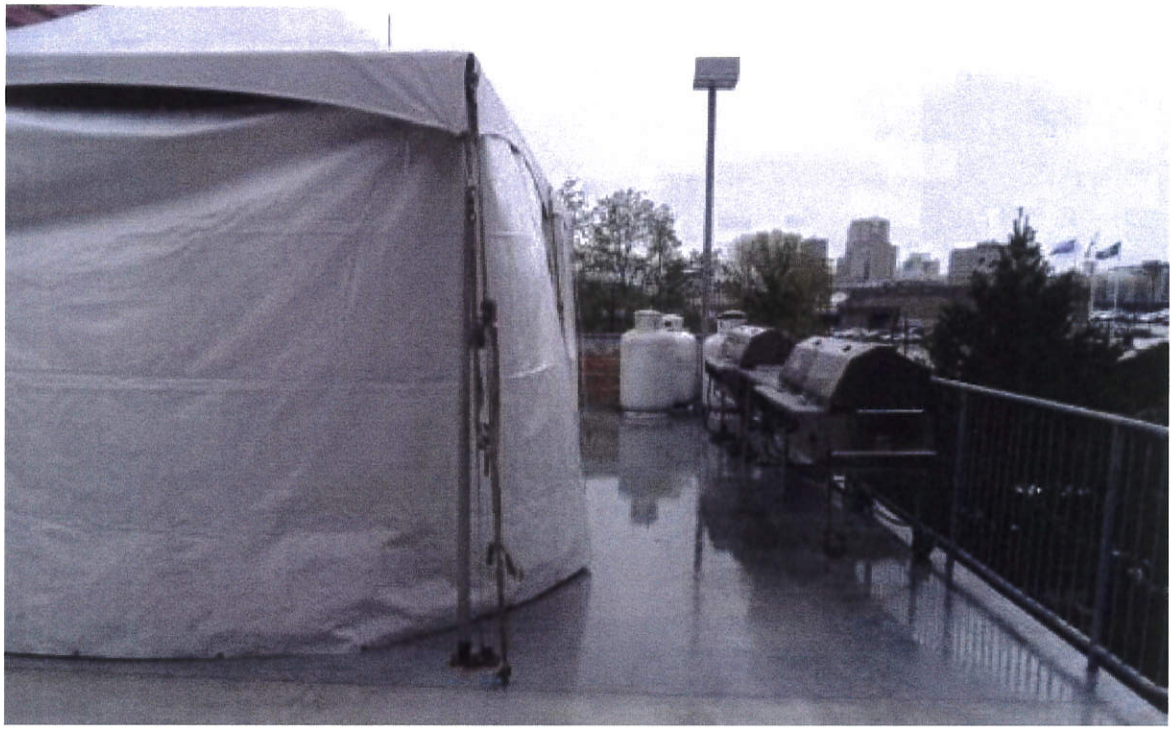
Additional propane storage cylinders.

ELECTRICAL

Electrical Systems for Sam Adams Kitchen

Exposure: The temporary outdoor kitchen supporting the Sam Adams Bar & Grill has no permanent electrical service outlets, normal or emergency lighting, appliance circuits, etc.

Impact: Temporary services can be unsafe and not intended for long-term use, nor are they reliable.



Temporary kitchen facilities, housed in tent, with no permanent electric services.

Field Lighting

Exposure: Field lighting level is reportedly inadequate and unreliable in some areas.

Impact: Inadequate lighting potentially could interfere with game play and fan viewing and satisfaction.

Field Lighting is reported to be inadequate and in need of re-aiming.

Recommend consideration be made for conversion to LED's. LED lighting would reduce energy consumption by approximately two thirds, extend useful lamp life by 4 or 5 times (or more), and reduce the safety exposure by reducing the need for difficult maintenance access

Lightning Protection

Exposure: The Stadium has no lightning protection, including a lack of TVSS protection.

Impact: Uncontrolled lightning strikes not handled safely by a properly designed system pose a risk of fire, structural damage, and injury to personnel. In addition, lack of a TVSS risks damage to valuable electronic and electrical equipment.

Lighting standards

Roof of stadium

Other exposed areas

F. FACILITIES CONDITION INDEX

Facilities Condition Index

- A ratio used to measure the relative condition of a single building or portfolio of buildings.
- Calculated by dividing the Current Replacement Value (CRV) into the existing Cost of Deferred Maintenance.
- NACUBO's FCI is an effective metric for ranking the condition of assets and using it for comparative analysis in a portfolio.

$$\textit{FACILITY CONDITION INDEX} = \frac{\textit{COST OF DEFERRED MAINTENANCE}}{\textit{CURRENT REPLACEMENT VALUE}}$$

Facilities Condition Index Rating

Suggested Condition Ratios ranges based on NACUBO are as follows:

FCI Range	NACUBO Condition Rating	*Aramark Rating Based on 30+ Years' Experience*
Under .05	Good	*Excellent*
.05 to .10	Fair	*Good*
.10 to .15	Poor	*Fair*
.15 to .30		*Poor*
Over .30		*Critical*

Facilities Condition Index Rating

Condition Estimate Rating

Estimated Current Replacement Value (CRV)	$27.3 Million
Total Need	$2.6 Million
Total Deferred Need	$2.4 Million

$$\textit{FACILITY CONDITION INDEX} = \frac{\textit{DEFERRED NEED } \$2{,}400{,}000}{\textit{CURRENT REPLACEMENT VALUE } \$27{,}272{,}000} = 0.09$$

G. DEFERRED MAINTENANCE MANAGEMENT STRATEGY

Deferred Maintenance Management Strategy

Acknowledge the Starting Point

- All institutions have deferred maintenance.
- Scarce resources focused on academics, as it should be.
- Competing needs of academic programs and facilities.
- Need to avoid disrupting the institution's educational mission.
- Exponential impact of delaying deferred maintenance phase-out.

Deferred Maintenance Management Strategy

Process Steps

1. Create a representative steering committee
2. Set phase-out goals in alignment w/ institution's missions / goals
3. Review overall Issues of collected data
4. Develop apportionment strategy / targets
   - by Constituency
   - by Institutional Stewardship
   - by Priority
   - by Type (safety, code, energy savings, comfort, sustainability, etc.)
   - by Impact on FCI
5. Develop annual phase-out plan based on available funds
6. Communicate approach and focus
7. Report on spending vs. strategy / targets
8. Manage the data and repeat

Deferred Maintenance Management Strategy

Institutional Mission vs. System Deficiencies

Re-Investment strategies should link to your mission and goals via institution's strategic plan.

	Stadium Systems					
Institutional Mission	Architectural	Mechanical	Plumbing	Electrical	Safety	Target %
Accessibility						3%
Asset Preservation						40%
Cost Control (ROI)						25%
Public Interface						5%
Safety / Security / Regulatory						10%
Patron Experience						2%
Event Support						3%
Sustainability						10%
Undefined Inst. Mission						2%
Target Percentage	25%	25%	15%	20%	15%	100%

High Priority

Medium Priority

Low Priority

H. OBSERVATION REPORT

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
1	Stadium	Interior	Finishes	Carpeting is well beyond its useful life.	Replace carpet with rubberized flooring system.	2021	$70,200.00
2	Stadium	Interior	Walls	Walls need paint	Paint all vertical surfaces.	2021	$13,000.00
3	Stadium	Interior	Doors	Doors are severely abused	Repair and refinish doors as needed	2021	$6,500.00
4	Stadium	Interior	Finishes	Some minor ceiling tile water stains	Investigate and correct 30+ annual leaks at stained tile areas and replace tiles as needed.	2021	$9,750.00
5	Stadium	Interior	Finishes	Concrete slab is stained and paint is worn	Clean and repaint concrete slab throughout the public areas of the concourse level with an epoxy based paint and sealant.	2021	$188,500.00
6	Stadium	Envelope	Façade	Galvanized railings exhibit rust in areas	All railings throughout the structure to be repaired as needed and painted with rust inhibiting paint throughout.	2018	$32,500.00
7	Stadium	Envelope	Façade	Steel superstructure is exhibiting areas of rust	Remove rust and paint entire superstructure with rust inhibiting paint.	2018	$162,500.00
8	Stadium	Envelope	Façade	Steel superstructure column bases	Remove 3/4" wide area of concrete at each column base and install elastomeric caulking to prevent slab cracks due to structural movement.	2018	$19,500.00
9	Stadium	Envelope	Façade	Corrugated exterior sheathing is rusted	Remove rust and paint all exterior corrugated metal panels where needed at food vending areas with rust inhibiting paint/replace panels that are rusted beyond their useful life.	2019	$15,600.00
10	Stadium	Interior	Finishes	Food service and food storage areas floors are in poor condition	Thoroughly strip all floors and refinish with an epoxy paint throughout all food service areas.	2018	$39,000.00
11	Stadium	Interior	Walls	Walls need paint	Paint all vertical surfaces in food preparation areas	2018	$19,500.00
12	Stadium	Interior	Finishes	Ceilings severely stained	Repaint existing ceiling grid and replace all ceiling tiles with vinyl covered tiles.	2018	$70,200.00

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
13	Stadium	Interior	Specialties	Insufficient toilet facilities	Construct new Men's & Women's Restrooms	2018	$46,800.00
14	Stadium	Envelope	Façade	Current food prep located in tents on concourse	Construct new metal building structure and interior finishes to house new kitchen for Sam Addams Bar & Grill.	2018	$107,016.00
15	Stadium	Interior	Finishes	Public area concrete slab is stained and paint is worn	Clean and repaint concrete slab throughout the public areas of the premium concourse level with an epoxy based paint & sealant (see note below).	2021	$39,000.00
16	Stadium	Interior	Specialties	Existing seating anchors are failing	Repair/replace seat anchors as needed.	2018	$ 4,810.00
17	Stadium	Interior	Specialties	Existing seating company is out of business and seats are beginning to fail	Replace 10%, 6,500 seats, per annum by section; cannibalize removed seats for parts to repair existing seating as needed.	2018	$8,407.75
18	Stadium	Interior	Finishes	Retaining walls are leaning outward and are beginning to fail	Retain Engineering firm to assess the issue and provide direction and documentation to remove existing dry stacked retaining walls and replace with poured-in-place structural concrete retaining walls: this is only an estimate for engineering fees, actual costs will be determined upon completion of engineering study and recommendations.	2018	$32,500.00
19	Stadium	Interior	Finishes	Retaining walls are leaning outward and are beginning to fail	Retain Engineering firm to assess the issue and provide direction and documentation to remove existing dry stacked retaining walls and replace with poured-in-place structural concrete retaining walls: this is only an estimate for engineering fees, actual costs will be determined upon completion of engineering study and recommendations.	2018	$32,500.00

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
20	Stadium	Plumbing	Distribution	Currently there are Insufficient toilet facilities (i.e., one WC and one lavatory) to meet Code requirements to support the bar, kitchen, dining room, and outdoor areas served by the Bar & Grille	Provide MEP services for construction of additional new Men's & Women's Restrooms to meet Code. (Room, partitions, finishes are provided in Architectural Observations).	2018	$165,000.00
21	Stadium	Plumbing	Distribution	Currently the kitchen function is being done in an open outdoor walkway area adjacent to the elevator outside the bar & grille, with all MEP services provided by portable and/or temporary means. This especially includes use of large numbers of un-secured portable propane bottles with hose connections to kitchen appliances, a very unsafe condition, with these bottles having to be hand-delivered to the location (presumably up the passenger elevator). In addition, the propane is high cost per BTU delivered.	Provide MEP services for construction of new enclosed, permanent kitchen facility, not including appliances, which are to be provided by others. (Room, partitions, finishes are provided in Architectural Observations). This includes providing new hard-pipe natural gas service to improve cost and especially safety.	2021	$150,000.00
22	Stadium	Plumbing	End Use	Base Option "A": The suites, press boxes, and suite-level toilets currently have electric water heaters. Many are original, aged (circa 2005, 12 years old), and past their expected lives, and are likely to leak and fail in service, doing damage to interior finishes. In addition, they are of a previous era of low energy efficiency compared to modern units, aggravated by long periods of non-use, with resulting large "stand-by" losses between occupancies, and require extra labor to drain and secure for winter shutdown.	Base Option "A": Remove the 5 gallon electric water heaters from the luxury suites. This will eliminate both electricity consumption during use and stand-by, prevent any further leak damage and eliminate the labor needed to winterize them. However, both the "luxury" suites and the toilet rooms serving them would no longer have hot water for hand washing, etc., detracting from their "luxury" status.	2021	$ 6,600.00

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
23	Stadium	Plumbing	End Use	Alternate Option "B": The suites, press boxes, and suite-level toilets currently have electric water heaters. Many are original, aged (circa 2005, 12 years old), and past their expected lives, and are likely to leak and fail in service, doing damage to interior finishes. In addition, they are of a previous era of low energy efficiency compared to modern units, aggravated by long periods of non-use, with resulting large "stand-by" losses between occupancies, and require extra labor to drain and secure for winter shutdown.	Alternate Option "B": Remove the 5 gallon electric water heaters from the luxury suites as under "Base Option", but also install "Point of Use" on-demand electric water heaters at the lavatories. This will eliminate electricity consumption during unoccupied periods, and greatly reduce it during occupied periods. In addition, by replacing the existing aged tank-type units, it will still prevent any further leak damage. It will also eliminate the labor needed to winterize them, since they will be "drained down" and winterized during the regular process of draining the piping they are a part of. Most importantly, this option will maintain the "luxury" nature of the suites and their toilet rooms, while saving energy and preventing water damage. The estimate for this Option includes the Base Option cost and adds the cost of the POU heaters.	2021	$ 23,100.00
24	Stadium	Plumbing	End Use	The existing 80 gallon gas-fired water heater is aged (circa 2005, 12 years old), past the end of its 10 year expected life, and of a lower level of energy efficiency than modern units, wasting energy, especially because of very long "stand-by" during unoccupied periods. In addition, this unit must be drained to preclude freeze-up during winter shutdown.	Replace the aged heater with premium efficiency gas-fired instantaneous heaters to eliminate energy waste during stand-by, reduce it during occupancy, and reduce the work needed to protect against freeze-up.	2021	$ 9,000.00

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
25	Stadium	Plumbing	End Use	The existing large, commercial gas-fired water heater, and its two 500 gallon storage tanks, is aged (circa 2005, 12 years old), approaching the end of its 15 year expected life, and of a lower level of energy efficiency than modern units, wasting energy, especially because of very long "stand-by" during unoccupied periods. In addition, this unit must be drained to preclude freeze-up during winter shutdown.	Recommend replacement with premium efficiency instantaneous gas-fired units at the end of the life of the existing system. This will eliminate stand-by energy loss, reduce occupied energy consumption, and reduce the labor needed to protect against freeze-up.	2025	$15,000.00
26	Stadium	Plumbing	End Use	The existing 80 gallon electric water heater is aged (circa 2005, 12 years old), past the end of its 10 year expected life, and of a lower level of energy efficiency than modern units, wasting energy, especially because of "stand-by" during ordinary-length unoccupied periods.	Replace the aged heater with premium efficiency gas-fired instantaneous heater to eliminate energy waste during stand-by, and reduce both energy consumption and unit cost during occupancy by conversion from electric to natural gas.	2021	$3,000.00
27	Stadium	Mechanical	End Use	The thirty-three PTAC conditioning units in the luxury suites are aged (circa 2005, 12 years old), past their 10 year expected lives, energy inefficient (including using high-cost resistance electric heat), noisy, and high maintenance, and may fail in service as they age further. Because of the sensitive nature of the occupancy, this is likely to cause replacement with less desirable units on an emergency basis.	Recommend planned replacement (over a three-year period to reduce budget and disruption impact) with premium efficiency units that use heat pump action as primary heat, with resistance heat as back-up. The priority given is to begin the replacement (worst units first), and the estimated cost is for the entire project.	2021	$92,764.50

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
28	Stadium	Mechanical	End Use	The six DX packaged units serving the other conditioned spaces of the stadium are aged (circa 2005, 12 years old), approaching their 20 year expected lives, energy inefficient (they use high-cost resistance electric heat), noisy, and high maintenance, and may fail in service as they age further. Failure in service may cause a need for emergency replacement with a less than desirable units, and at higher than normal costs.	Recommend planned replacement (over a three-year period to reduce budget and disruption impact) with premium efficiency units that use natural gas heat. The priority given is to begin the replacement (worst units first), and the estimated cost is for the entire project.	2025	$202,959.00
29	Stadium	Electrical	End Use	Option A: Operations personnel report poor aiming resulting in illumination issues by the stadium lighting. In addition, this lighting is costly to operate, and lamps are costly and very difficult and pose an access safety risk for replacement when lamps fail.	Option A: Re-aim the existing lighting, while replacing lamps that have failed. This restores full existing lighting capability.	2021	$240,000.00
30	Stadium	Electrical	End Use	Option B: Operations personnel report poor aiming resulting in illumination issues by the stadium lighting. In addition, this lighting is costly to operate, and lamps are costly and very difficult and pose an access safety risk for replacement when lamps fail.	Option B: Replace existing lighting with LED, including re-aiming to best effect. This will save approximately 60% of energy consumption, while approximately quadrupling existing lamp life, and minimizing the risks associated with lamp replacement. The estimate is intended to provide an order of magnitude figure, which will be dependent on the exact information to be determined in a detailed study.	2021	$450,000.00
31	Stadium	Mechanical	End Use	None of the elevator machine rooms have any secondary containment to prevent a spill of hydraulic oil	Install secondary containment in all elevator MER's.	2018	$7,500.00
32	Stadium	Plumbing	Sprinkler	The fire pump is at mid-life (circa 2004, 13 years old), and should be planned for overhaul in the near future.	Overhaul the fire pump.	2021	$26,250.00
33	Stadium	Plumbing	Distribution	The piping is not all labeled per ANSI Standard, as required by OSHA	Label all piping per ANSI Standard.	2021	$7,500.00

Observation Report

FCA ID	Building Name	System	SubSystem	Equipment or Observation Description	Corrective Action	Current Scheduled Year	Total Cost
34	Stadium	Mechanical	Generation	The refrigeration condensers are at risk of more serious damage from falling ice from the stadium roof, with only temporary protection being provided with a plywood a-frame	Provide permanent protection for the condensers.	2018	$7,500.00
35	Stadium	Electrical	Distribution	The stadium has no lightning protection, including a Transient Voltage Suppression System	Install a lightning protection system, including a Transient Voltage Suppression System.	2019	$112,500.00
36	Stadium	Mechanical	End Use	The stadium does not have a central BMS with control and sensing of the entire facility. As a result, many energy conservation opportunities are missed.	Install a wide-ranging BMS system, including commissioning, that take advantage of scheduling, etc., to reduce energy consumption and costs. The estimate is intended to provide a budget towards this goal.	2021	$150,000.00